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## Pandemic exit strategy

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**Search terms and notes** (full search strategy for database searches below):

**KnowledgeShare**: pandemics, exit strategy

**Cochrane:**pandemic in Title Abstract Keyword AND "exit strategy" or recovery in Title Abstract Keyword - (Word variations have been searched)

**TRIP Database**: pandemic ("exit strategy" or "exit strategies"), pandemic ("public health strategy" or "public health strategies")

**CEBM COVID page:** exit

**PubMed:** pandemic AND ("lockdown exit strateg\*" or "public health strateg\*")

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## A. Original Research

1. **Making sense of the Global Coronavirus Data: The role of testing rates in understanding the pandemic and our exit strategy**  
   Potluri Rahul Available at SSRN 3570304 2020;:No page numbers.

The Coronavirus disease 2019(COVID-19) outbreak has caused havoc across the world. Subsequently, research on COVID-19 has focused on number of cases and deaths and predicted projections have focused on these parameters. We propose that the number of tests performed is a very important denominator in understanding the COVID-19 data. We analysed the number of diagnostic tests performed in proportion to the number of cases and subsequently deaths across different countries and projected pandemic outcomes. We obtained real time COVID-19 data from the reference website Worldometer at 0900 BST on Saturday 4th April, 2020 and collated the information obtained on the top 50 countries with the highest number of COVID 19 cases. We analysed this data according to the number of tests performed as the main denominator. Country wise population level pandemic projections were extrapolated utilising three models - 1) inherent case per test and death per test rates at the time of obtaining the data (4/4/2020 0900 BST) for each country; 2) rates adjusted according to the countries who conducted at least 100000 tests and 3) rates adjusted according to South Korea. We showed that testing rates impact on the number of cases and deaths and ultimately on future projections for the pandemic across different countries. We found that countries with the highest testing rates per population have the lowest death rates and give us an early indication of an eventual COVID-19 mortality rate. It is only by continued testing on a large scale that will enable us to know if the increasing number of patients who are seriously unwell in hospitals across the world are the tip of the iceberg or not. Accordingly, obtaining this information through a rapid increase in testing globally is the only way which will enable us to exit the COVID-19 pandemic and reduce economic and social instability.

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1. **Mitigating COVID-19 With Lockdowns: A Possible Exit Strategy**  
   Sarwal Rakesh Available at SSRN 3563538 2020;:No page numbers.

Lockdown is now accepted as an effective public health measure of prevention and mitigation of COVID-19 pandemic. Over 1 billion people have been asked to stay home in over 50 countries and territories. There is little clarity on the optimal duration of a lockdown and how to strategize easing of restrictions without igniting a subsequent round of outbreak. Lockdown involves hard choices and challenging to maintain essential services. Lockdowns do not offer a lasting solution, while a three-week lockdown is insufficient to prevent a resurgence. We explore an exit strategy from lockdowns based on the natural history of Coronavirus. We add value to the concept of intermittent social distancing by adding a “localization” strategy after 14 days of lockdown within externally quarantined areas in which normal economic and educational activity can be resumed. We call it “COVID-Free, Externally Quarantined Territories” or CF-EQT.

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1. **Preparing for a responsible lockdown exit strategy**  
   Gilbert Marius Nature Medicine 2020;:1-2.

In just a few weeks’ time, leaders across the globe will have to start making decisions about lifting lockdown policies, with considerable social, economic and political consequences. We propose a framework for what is arguably the most difficult health challenge that governments have faced since the beginning of this century: a responsible lockdown exit strategy.

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1. **Technology: An Exit Strategy for COVID-19?**  
   Barbieri Cristian Commentaries Istituto Affari Internazionali, Commentaries, March 2020;:1-4.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=65c96a6cba1428ba815e5a0860e116f9)

1. **The EU response to the COVID-19 pandemic: achieving relevance, mobilising solidarity and preparing for the future**  
   Brendebach Jonas 2020;:No page numbers.

On March 27th, 2020, the EUI’s School of Transnational Governance gathered eighteen reputed social scientists, public health experts, and policy makers in a virtual workshop to discuss the short and medium-term implications of the COVID-19 pandemic on the European Union (EU). The crisis’ impact already reverberates deeply and widely in the European political sphere, social fabric and economic architecture. In spite of health being an exclusive Member State competence, EU institutions have been asked to respond to the immediate health threat presented by the contagion and to foresee and address consequences for the European economy and key policy areas of the Union, from the monetary union to the free movement of people.

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1. **The Three Steps Needed to End the COVID-19 Pandemic: Bold Public Health Leadership, Rapid Innovations, and Courageous Political Will.**  
   Guest Jodie L. JMIR public health and surveillance 2020;6(2):e19043-e19043.

The world is experiencing the expansive spread of severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2) in a global pandemic that is placing strain on health care, economic, and social systems. Commitment to implementing proven public health strategies will require bold public health leadership and courageous acts by politicians. Developing new innovative communication, mitigation, and health care approaches, particularly in the era of social media, is also clearly warranted. We believe that the best public health evidence must inform activities in three priority areas to stop this pandemic: (1) coordinated and consistent stay-at-home orders across multiple jurisdictions, including potential nationwide mandates; (2) rapid scale-up of SARS-CoV-2 testing; and (3) improved health care capacity to respond. This editorial outlines those areas, the rationale behind them, and the call for innovation and engagement of bold public health leadership to empower courageous political action to reduce the number of deaths during this pandemic.

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1. **Virus testing will be key to lockdown exit strategies**  
   Analytica Oxford Emerald Expert Briefings 2020;(oxan-db):No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=c54561ea40b85c3ba1a6267575b12185)

1. **A Comparative Budget Requirements for TB program based on Minimum standard of Services (SPM) and Budget Realization: an Exit Strategy Before Termination of GF ATM**  
   Setiawan Ery Jurnal Ekonomi Kesehatan Indonesia 2016;1(1):No page numbers.

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1. **Neighborhood determinants of 2009 pandemic A/H1N1 influenza vaccination in Montreal, Quebec, Canada.**  
   Brien Stephanie American journal of epidemiology 2012;176(10):897-908.

Neighborhood-level analyses of influenza vaccination can identify the characteristics of vulnerable neighborhoods, which can inform public health strategy for future pandemics. In this study, the authors analyzed rates of 2009 pandemic A/H1N1 influenza vaccination in Montreal, Quebec, Canada, using individual-level vaccination records from a vaccination registry with census, survey, and administrative data to estimate the population at risk. The neighborhood socioeconomic and demographic determinants of vaccination were identified using Bayesian ecologic logistic regression, with random effects to account for spatial autocorrelation. A total of 918,773 (49.9%) Montreal residents were vaccinated against pandemic A/H1N1 influenza from October 22, 2009, through April 8, 2010. Coverage was greatest among females, children under age 5 years, and health-care workers. Neighborhood vaccine coverage ranged from 33.6% to 71.0%. Neighborhoods with high percentages of immigrants (per 5% increase, odds ratio = 0.90, 95% credible interval: 0.86, 0.95) and material deprivation (per 1-unit increase in deprivation score, odds ratio = 0.93, 95% credible interval: 0.88, 0.98) had lower vaccine coverage. Half of the Montreal population was vaccinated; however, considerable heterogeneity in coverage was observed between neighborhoods and subgroups. In future vaccination campaigns, neighborhoods that are materially deprived or have high percentages of immigrants may benefit from focused interventions.

1. **From containment to community: Trigger points from the London pandemic (H1N1) 2009 influenza incident response.**  
   Balasegaram S. Public health 2011;125(2):72-78.

OBJECTIVE: In the UK, during the first wave of pandemic (H1N1) 2009 influenza, a national 'containment' strategy was employed from 25 April to 2 July 2009, with case finding, treatment of cases, contact tracing and prophylaxis of close contacts. The aim of the strategy was to delay the introduction and spread of pandemic flu in the UK, provide a better understanding of the course of the novel disease, and thereby allow more time for the development of treatment and vaccination options. STUDY DESIGN: Descriptive study of the management of the containment phase of pandemic (H1N1) 2009 influenza. METHODS: Analysis of data reported to the London Flu Response Centre (LFRC). RESULTS: The average number of telephone calls and faxes per day from health professionals before 15 June 2009 was 188, but this started to rise from 363 on 12 June, to 674 on 15 June, and peaked on 22 June at 2206 calls. The number of cases confirmed [by pandemic (H1N1) 2009 influenza specific H1 and N1 polymerase chain reaction] in London rose to a peak of 200 cases per day. There were widespread school outbreaks reporting large numbers of absences with influenza-like illnesses. Activity in the LFRC intensified to a point where London was declared a 'hot spot' for pandemic (H1N1) 2009 influenza on 19 June 2009 because of sustained community transmission. The local incident response was modified to the 'outbreak management phase' of the containment phase. CONCLUSIONS: The sharp rise in the number of telephone calls and the rise in school outbreaks appeared to be trigger points for community transmission. These indicators should inform decisions on modifying public health strategy in pandemic situations.

1. **"Better off in school": School medical inspection as a public health strategy during the 1918-1919 influenza pandemic in the United States.**  
   Stern Alexandra Minna Public health reports (Washington, D.C. : 1974) 2010;125 Suppl 3(Suppl 3):63-70.

During the 1918-1919 influenza pandemic in the United States, most cities responded by implementing community mitigation strategies, such as school closure. However, three cities--New York City, Chicago, and New Haven, Connecticut--diverged from the dominant pattern by keeping their public schools open while the pandemic raged. This article situates the experiences of these three cities in the broader context of the Progressive era, when officials and experts put great faith in expanding public programs in health and education. It adds an important dimension to the historical understanding of the 1918-1919 influenza pandemic and offers lessons for public health practitioners and policymakers today who might face difficult decisions about how to respond to the 2009 H1N1 influenza pandemic.

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1. **Public health strategies for pandemic influenza: ethics and the law.**  
   Gostin Lawrence JAMA 2006;295(14):1700-1704.

Highly pathogenic influenza A(H5N1) is endemic in avian populations in Southeast Asia, with serious outbreaks now in Africa, Europe, and the Middle East.1 Human cases, although rare, continue to increase, with high reported case-fatality rates. Industrialized countries place great emphasis on scientific solutions. The White House strategic plan and congressional appropriation both devote more than 90% of pandemic influenza spending to vaccines and antiviral medications.2 Yet, medical countermeasures, discussed in a previous JAMA Commentary, will not impede pandemic spread: experimental H5N1 vaccines may not be effective against a novel human subtype, neuraminidase inhibitors may become resistant, and medical countermeasures will be extremely scarce.3 This Commentary focuses on traditional public health interventions, drawing lessons from past influenza pandemics and the outbreaks of severe acute respiratory syndrome (SARS)4 (Table).

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